**8/24/12**

**Question:**When a transmembrane protein is embedded in the plasma membrane, the topology is conserved. What about for a protein that occurs in two different tissue types, such as GLUT2 in pancreas and liver?

**Answer:**

It does not matter on cell or tissue location, topology of a specific protein is always the same, i.e. conserved. The information dictating the topology of each specific type of protein is an essential part of its nature and is determined by the primary sequence and folding, etc. for that protein, irrespective of cell type.

**Question:**

Is the Potassium Ion-Channel on Slide #26 a Potassium "Leak Channel"?

**Answer:**

No it is a gated type channel (not leak as K+ leak channels are always open, therefore not gated) I did not specifically cover the leak channels, I do not have my slides with me right now, but I really did not present very much information on the leak channels, just the idea that they exist. The channels I talked about were all gated types, and K+ leak channels are always open, i.e. not gated.

**Question:**

Is the Sodium/Glucose symporter on slide #53 also a GLUT Protein?

**Answer:**No it is not a GLUT type transporter. GLUT proteins are facilitative diffusion while the one you mentioned is secondary transport type, of the symporter variety. The protein structure is completely different as are their respective mechanisms of action.

**8/23/12**

**Question:**

I was going through the notes and wondered if glycolipids have a glycerol backbone, or is that replaced with the sphingosine?

**Answer:**

Yes that is the case, if we think that in phospholipids the backbone is glycerol, in that it is glycerol that serves as the points of covalent attachment of both the fatty acid (acyl) side chains as well as the phosphate head group. So in glycolipids, the same type of structural function is carried out by sphingosine, rather than glycerol. It is sphingosine where the fatty acid unit is attached, and also it is sphingosine where the polar part of the structure is attached. However in the case of glycolipids, this polar (hydrophilic) group is not a phosphate-containing moiety but one that is a sugar (such as glucose or galactose).

**Question:**

Are proteins anchored to the lipid bilayer through a lipid anchor considered integral or peripheral ?

**Answer:**

Proteins that have parts such as lipid anchors that extend into the **lipid core** of the bilayer (which is what lipid anchors do) can be regarded as integral. However there might be exceptions once in a while, but for all intents in purposes at this point in general the answer is yes. There are tens of thousands of proteins, the vast majority have not been studied in detail, so there might always be an exception to be found.